

**TUNE, ENTREKIN & WHITE, P.C.**

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JOSEPH P. RUSNAK  
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December 17, 2004

**Via Hand Delivery Only**

Tennessee Regulatory Authority  
Sharla Dillon, Docket Room Manager  
460 James Robertson Parkway  
Nashville, TN 37243

RE: Cartwright Creek, LLC's Petition to Amend Certificate of Public  
Convenience and Necessity to Provide Wastewater Utility Services  
TRA Docket No. 04-00358

Dear Ms Dillon:

In response to the additional information requested in the December 15, 2004 Data Request forwarded by Utilities Division Chief, Darlene Standley regarding the above-referenced petition, it is my pleasure to submit for filing an original and thirteen copies of Cartwright Creek's responses to the requested information. The numbered paragraphs below correspond with the numbered paragraphs in the Data Request.

1. Pro-Forma financials provided for the Waterbridge Development of Cartwright Creek, LLC used increased rates for tap fees not currently approved by the Authority. Please submit new pro-formas utilizing existing approved tariffed rates.

**RESPONSE**

See attached Exhibit A.

2. Please provide a detailed explanation of why the Insurance Expense on the Pro-Forma Financials for Waterbridge Development drops off after Year 1.

**RESPONSE**

This drop off was an oversight in the preparation of the spreadsheet. Insurance expense will continue at the same rate in future years. The pro-forma requested above, reflect this change.

3. Please provide a detailed explanation of why Operating Revenues on the Pro-Formas for Waterbridge Development continue to increase after the number of homes caps at 214.

**RESPONSE**

The financial projections for operating expenses included an assumption of 3% inflation after year 2005. The increase in operating revenues after the build out included a pro-forma rate adjustment of 3% to cover this assumed inflationary expense increase illustrate the long-term financial viability of the proposed service expansion to Waterbridge/PGA5 area. Sheaffer does not intend to seek any future rate adjustments at the current time. It believes that modest repairs to the plant facility to reduce a significant infiltration and inflow problem will allow an modest expansion of the customer base within the established plant capacity to minimize the need for future rate increases.

4. Please provide a detailed explanation for the Billing Allowance Paid to Cartwright Creek on the Pro-Forma for Waterbridge Development and why it continues to increase after homes cap at 214.

**RESPONSE**

Currently, Cartwright Creek contracts with Haury and Smith to provide accounting and billing services. Sheaffer is planning to continue this practice during the next few months to facilitate a seamless transition of ownership from a customer perspective. The billing allowance reflects an adjustment of this contract to cover the incremental aspects of billing the additional customers. The increase in billing allowing after homes cap at 214 including an allowance for expected inflation of 3% per year. Sheaffer will assume accounting responsibilities for Cartwright Creek after an appropriate transition period under similar terms and conditions.

5. Please provide pre-filed testimony from an executive of Cartwright Creek, LLC affirming the technical, managerial and financial capabilities of Cartwright Creek, LLC. Testimony should include all evidence and relevant information that Cartwright Creek, LLC intends to rely on to support its expansion request.

**TUNE, ENTREKIN & WHITE, P.C.**

**RESPONSE**

See attached Exhibit B.

6. Please provide a detailed explanation of why the Insurance Expense on the Cartwright Creek, LLC Income Statement was \$475.00 in 2004 and jumped to a projected \$6,000 in 2005.

**RESPONSE**

The current insurance program provides for minimal general liability and property coverage for only \$41,000 of the existing facility. The increased insurance expense covers extended property insurance coverage to replacement cost, a boiler and machinery policy to cover unexpected breakdowns in critical system machinery with a modest deductible rather than self-insurance through repair expense. In addition, Sheaffer is increasing its liability cover to \$2,000,000.

7. Please provide a detailed explanation of the increase in Purchased Power on the Cartwright Creek, LLC Income Statement from \$23,462 in 2004 to \$38,000 in 2005.

**RESPONSE**

Sheaffer International intends to install during the first quarter of 2005 a Sheaffer Sludge Elimination System at the site upon approval of the TDEC. The costs of this installation will be borne by Sheaffer International funded through investment. Cartwright Creek will enter a lease agreement with Sheaffer to recover these costs. These process will mineralize the biosolids through a process of anaerobic and aerobic digestion and extended aeration. The increase power costs shown in 2005 reflects the operational costs of this system.

8. Please provide a detailed explanation of the reduction in the amount for Repairs and Maintenance Cartwright Creek, LLC Income Statement from \$31,222 in 2004 to \$12,000 in 2005.

**RESPONSE**

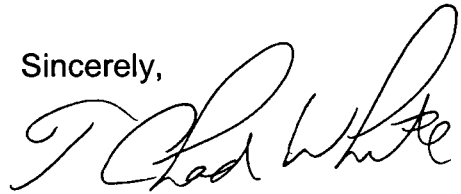
During the last year, Cartwright Creek incurred several one-time only repairs relating the treatment facility. The \$12,000 projected amount reflects anticipated normal recurring ongoing maintenance costs of the facility. In addition, Sheaffer is purchasing a boiler and machinery insurance policy which will fund any extraordinary repairs to key mechanical components. Accordingly, we believe that the decreased projected repair expenses is reasonable.

**TUNE, ENTREKIN & WHITE, P.C.**

With regard to the indication made in the final paragraph of the December 15, 2004 Data Request that Responses 2, 3, 5 and 7 of the December 6, 2004 Data Request were "incomplete," Cartwright Creek submits that the pre-file testimony attached hereto as Exhibit B addresses and fully satisfies any outstanding needs of these prior responses.

Thank you for your consideration of Cartwright Creek's Petition. Please contact me, if you have any other questions or need anything further.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Chad White". The signature is fluid and cursive, with the first name "T" being a large, stylized capital letter.

T. Chad White

TCW/ab

Attached Exhibits

H:\CWhite\Sheaffer (Waterbndge) 14124 01\12 04 Data Request Resp\Resp Data Request 12 6 04 wpd

Cartwright Creek, LLC  
Five Year Pro-Forma Income and Expense and Balance Sheets 2004-2010

Cartwright Creek Utility Co , Inc  
Income Statement  
Twelve Months Ended October 31,

	2004	2005	2006	2007	2008	2009
<b>Income</b>						
Residential revenues	184,732	\$ 185,000	\$ 190,550	\$ 196,267	\$ 202,154	\$ 208,219
Commercial revenues	53,259	\$ 54,000	\$ 55,620	\$ 57,289	\$ 59,007	\$ 60,777
Other sewer revenues	421	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400
<b>TOTAL Income</b>	<b>238,412</b>	<b>239,400</b>	<b>246,570</b>	<b>253,955</b>	<b>261,562</b>	<b>269,397</b>
<b>Expenses</b>						
Sludge removal expense	68,790	\$ -	\$ -	\$ -	\$ -	\$ -
Purchased power	23,462	\$ 38,000	\$ 39,140	\$ 40,314	\$ 41,524	\$ 42,769
Chemicals	6,517	\$ 6,000	\$ 6,180	\$ 6,365	\$ 6,556	\$ 6,753
Materials & supplies	23,607	\$ 22,000	\$ 22,660	\$ 23,340	\$ 24,040	\$ 24,761
Cont serv - engineering	6,127	\$ 2,000	\$ 2,060	\$ 2,122	\$ 2,185	\$ 2,251
Contract Operators	38,150	\$ 38,150	\$ 39,295	\$ 40,473	\$ 41,688	\$ 42,938
Cont serv - accounting	30,000	\$ 30,000	\$ 30,900	\$ 31,827	\$ 32,782	\$ 33,765
Cont serv - repairs & maint	31,222	\$ 12,000	\$ 12,360	\$ 12,731	\$ 13,113	\$ 13,506
Cont Services - Legal	9,540	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Cont serv - Consulting fees	60,000	\$ -	\$ -	\$ -	\$ -	\$ -
Sheaffer Management Fee		\$ 14,000	\$ 14,420	\$ 14,853	\$ 15,298	\$ 15,757
Rents	4,800	\$ 1,800	\$ 1,854	\$ 1,910	\$ 1,967	\$ 2,026
Sheaffer Sludge System Lease		\$ 20,000	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510
Insurance expenses	475	\$ 6,000	\$ 6,180	\$ 6,365	\$ 6,556	\$ 6,753
Postage	1,576	\$ 1,600	\$ 1,648	\$ 1,697	\$ 1,748	\$ 1,801
Regulatory commission expense	657	\$ 700	\$ 721	\$ 743	\$ 765	\$ 788
Bad debt expense	1,718	\$ 1,500	\$ 1,545	\$ 1,591	\$ 1,639	\$ 1,688
Bank charges	406	\$ 430	\$ 443	\$ 456	\$ 470	\$ 484
Miscellaneous expense	1,078	\$ 1,100	\$ 1,133	\$ 1,167	\$ 1,202	\$ 1,238
<b>TOTAL Expenses</b>	<b>308,125</b>	<b>\$ 200,280</b>	<b>\$ 206,288</b>	<b>\$ 212,477</b>	<b>\$ 218,851</b>	<b>\$ 225,417</b>
<b>OPERATING PROFIT (LOSS)</b>	<b>(69,713)</b>	<b>\$ 39,120</b>	<b>\$ 40,282</b>	<b>\$ 41,478</b>	<b>\$ 42,710</b>	<b>\$ 43,980</b>
<b>Other Income &amp; Expenses</b>						
Depreciation	(83,103)	\$ (83,103)	\$ (83,103)	\$ (83,103)	\$ (83,103)	\$ (83,103)
Taxes other than income	(11,218)	\$ (11,218)	\$ (11,218)	\$ (11,218)	\$ (11,218)	\$ (11,218)
Interest & dividend income	230	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5
Donations for charitable, soci	(3,000)	\$ (1,500)	\$ (1,500)	\$ (1,500)	\$ (1,500)	\$ (1,500)
Interest expense	(22,060)	\$ (22,060)	\$ (22,060)	\$ (22,060)	\$ (22,060)	\$ (22,060)
<b>TOTAL Other Income &amp; Expenses</b>	<b>(119,150)</b>	<b>(117,875)</b>	<b>(117,875)</b>	<b>(117,875)</b>	<b>(117,875)</b>	<b>(117,875)</b>
<b>PROFIT (LOSS) BEFORE TAXES</b>	<b>(188,863)</b>	<b>(78,755)</b>	<b>(77,594)</b>	<b>(76,397)</b>	<b>(75,165)</b>	<b>(73,896)</b>
Tax Distribution to Investors	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>NET PROFIT (LOSS)</b>	<b>(188,863)</b>	<b>(78,755)</b>	<b>(77,594)</b>	<b>(76,397)</b>	<b>(75,165)</b>	<b>(73,896)</b>
Net Cash Flow	(105,760)	4,348	5,509	6,706	7,938	9,207

Cartwright Creek, LLC  
Five Year Pro-Forma Income and Expense and Balance Sheets 2004-2010

Cartwright Creek Utility Co.  
Balance Sheet  
As of: October 31,

	2004	2005	2006	2007	2008	2009
<b>Current Assets:</b>						
Fifth Third Bank - MMA	\$297	\$297	\$297	\$297	\$297	\$297
Union Planters - Operating	\$458	4,805 7	10,314.9	17,020.5	24,958.4	34,165 6
Union Planters - MMA	\$5,475	\$5,475	\$5,475	\$5,475	\$5,475	\$5,475
Deferred Rate Case Expense	\$668	\$668	\$668	\$668	\$668	\$668
Customer accounts receivable	(\$498)	(\$498)	(\$498)	(\$498)	(\$498)	(\$498)
<b>TOTAL Current Assets</b>	<b>\$6,401</b>	<b>\$10,748</b>	<b>\$16,257</b>	<b>\$22,963</b>	<b>\$30,901</b>	<b>\$40,108</b>
<b>Fixed Assets:</b>						
Utility plant in service	\$956,947	\$956,947	\$956,947	\$956,947	\$956,947	\$956,947
A/D & amort of utility plant	(\$693,064)	(\$776,167)	(\$859,270)	(\$942,373)	(\$1,025,476)	(\$1,108,579)
Utility Plant in Service						
Structures & improvements	\$25,757	\$25,757	\$25,757	\$25,757	\$25,757	\$25,757
Collection sewers - gravity	\$219,975	\$219,975	\$219,975	\$219,975	\$219,975	\$219,975
Flow measuring devices	\$5,414	\$5,414	\$5,414	\$5,414	\$5,414	\$5,414
Flow measuring installations	\$7,160	\$7,160	\$7,160	\$7,160	\$7,160	\$7,160
Receiving wells	\$95,903	\$95,903	\$95,903	\$95,903	\$95,903	\$95,903
Pumping equipment	\$127,225	\$127,225	\$127,225	\$127,225	\$127,225	\$127,225
Treatment & disposal equipment	\$409,085	\$409,085	\$409,085	\$409,085	\$409,085	\$409,085
Plant sewers	\$11,158	\$11,158	\$11,158	\$11,158	\$11,158	\$11,158
Outfall sewer lines	\$21,758	\$21,758	\$21,758	\$21,758	\$21,758	\$21,758
Other plant & misc equipment	\$31,303	\$31,303	\$31,303	\$31,303	\$31,303	\$31,303
Other tangible plant	\$2,209	\$2,209	\$2,209	\$2,209	\$2,209	\$2,209
Utility plant in service offse	(\$956,947)	(\$956,947)	(\$956,947)	(\$956,947)	(\$956,947)	(\$956,947)
TOTAL Utility plant in service offset						
<b>TOTAL Fixed Assets</b>	<b>\$263,883</b>	<b>\$180,780</b>	<b>\$97,677</b>	<b>\$14,574</b>	<b>(\$68,529)</b>	<b>(\$151,632)</b>
<b>Other Assets:</b>						
Misc current & accrued assets						
<b>TOTAL Other Assets</b>	<b>\$321</b>	<b>\$321</b>	<b>\$321</b>	<b>\$321</b>	<b>\$321</b>	<b>\$321</b>
<b>TOTAL ASSETS</b>	<b>\$270,605</b>	<b>\$191,849</b>	<b>\$114,255</b>	<b>\$37,858</b>	<b>(\$37,307)</b>	<b>(\$111,203)</b>
<b>LIABILITIES</b>						
<b>Current Liabilities:</b>						
Accounts payable	49,349	49,349	49,349	49,349	49,349	49,349
Accrued Franchise Tax	585	585	585	585	585	585
Accrued Ad Valorem Tax	3,650	3,650	3,650	3,650	3,650	3,650
Accrued Gross Receipts tax	4,880	4,880	4,880	4,880	4,880	4,880
Accrued interest						
<b>TOTAL Current Liabilities</b>	<b>58,464</b>	<b>58,464</b>	<b>58,464</b>	<b>58,464</b>	<b>58,464</b>	<b>58,464</b>

Cartwright Creek, LLC  
Five Year Pro-Forma Income and Expense and Balance Sheets 2004-2010

**Long-Term Liabilities:**

L/T Debt - Reese L Smith III

L/T Debt - Stephen B Smith

423,494	423,494	423,494	423,494	423,494	423,494
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**TOTAL Long-Term Liabilities**

423,494	423,494	423,494	423,494	423,494	423,494
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**Other Liabilities:**

Contributions in aid of constr

1,150,293	1,150,293	1,150,293	1,150,293	1,150,293	1,150,293
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**TOTAL Other Liabilities**

1,150,293	1,150,293	1,150,293	1,150,293	1,150,293	1,150,293
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**TOTAL LIABILITIES**

1,632,251	1,632,251	1,632,251	1,632,251	1,632,251	1,632,251
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**CAPITAL**

Common stock issued

Retained earnings (deficit)

Year-to-Date Earnings

1,000	1,000	1,000	1,000	1,000	1,000
(1,246,266)	(1,361,646)	(1,439,401)	(1,515,995)	(1,591,393)	(1,665,558)
(116,380)	(78,755)	(77,594)	(76,397)	(75,165)	(73,896)

**TOTAL CAPITAL**

(1,361,646)	(1,439,401)	(1,515,995)	(1,591,393)	(1,665,558)	(1,738,454)
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**TOTAL LIABILITIES & CAPITAL**

270,605	192,849	116,255	40,858	(33,307)	(106,203)
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Waterbridge										Year 10
Full Build Out Operating Scenario										
3/16/2004										
Total Homes Occupied										
Homes Sold @ Waterbridge										
Operating Revenue										
214 homes x \$ 34.82 (3-4 bedrooms) = \$7,451 Monthly \$89,418										
Tap Fees \$ 3,333.33 (3-4 bedrooms) = (\$2,500 + 33 1/3 tax allowance)										
Developer Contribution										
Total Revenues										
Cost of Operation										
Labor										
Operating Labor										
4 hours/day, 5 days/week = 0.5 Person										
Base \$50,000 \$70,000										
Power										
Blowers										
10 Hp 7.5 Kw \$ 4,598										
15 Hp 11.25 Kw \$ 1,448										
1 Hp 0.75 Kw \$ 460										
Hypochlorite (Commercial grade)										
10 mg/l feed rate 250 gallons/yr \$1 /gallon \$250										
Testing and Analytical										
Quarterly Testing (BOD, TSS, Ammonia)										
4 x 500 \$ 2,000										
Other Expenses										
Insurance										
Vehicle \$ 7,000										
Mowing \$ 2,625										
Phone line for autodialer \$ 2,000										
1/2 cell phone and pager @\$100/month \$ 500										
Misc Supplies \$ 600										
Billing Allowance Paid to Cartwright Creek										
214 pumps \$ 988										
Cartwright Creek Payment										
12% of revenue										
Subtotal Annual Operating Costs										
30,935.48 \$										
Net Operating Income Before Other Items										
Other Income Expense/Reserves for Replacement										
Interest Earnings on Reserves										
Depreciation										
Debt Service										
Taxes										
Net Income After Taxes										
Statement of Cash Flows										
Net Income After Taxes										
Contributions										
Less Other Allowances										
Reserve Fund for Replacement and Unscheduled Maintenance										
Includes Entire collection system except grinder pumps										
Blowers, irrigation pumps, hypo pump										



Electrical equipment and instrumentation  
Irrigation system, auto valves nozzles  
214 homes **\$36**

**Unaddressed Issues**  
**Property taxes**  
**Possibility of Brentwood style intal pump replacement charge of \$2000**

- Operating Labor includes routine maintenance
- Operating Labor includes unscheduled maintenance that can be accomplished w/hand tools
- Primary and secondary irrigation areas maintained by Carwright/USTheater
- Primary and secondary irrigation areas planted with mowable grass
- Remainder of green space maintained by others
- Carwright creek Handles Billing and Collection

Debit Schedule	Rate	4%
1	800,000	32,000
2	750,000	30,000
3	720,000	28,800
4	680,000	27,200
5	600,000	24,000
6	560,000	22,400
7	520,000	20,800
8	480,000	19,200
9	440,000	17,600
10	400,000	16,000
		800,000
		248,000
Tax Impact		600,000
		1,648,000
		7629 62863

Electrical equipment and instrumentation  
irrigation system, auto valves, nozzles  
214 homes \$360

### Unaddressed Issues

### Assumptions

Primary and secondary irrigation areas maintained by Cartwright/Sheaffer

## Remainder of green space maintained by others

**THE UNIVERSITY OF CHICAGO**

Cartwright Creek, LLC  
Pro-forma Financial Statements for Existing Grassland Plant and PGA5

Cartwright Creek Utility Co , Inc  
Income Statement  
Twelve Months Ended October 31,

	2004	2005	2006	2007	2008	2009
<b>Income</b>						
Residential revenues _Grasslands	184,732 \$	185,000 \$	190,550 \$	196,267 \$	202,154 \$	208,219 \$
Commercial revenues _Grasslands	53,259 \$	54,000 \$	55,620 \$	57,289 \$	59,007 \$	60,777 \$
Residential revenues _PGA5	\$	13,371 \$	37,188 \$	58,080 \$	78,972 \$	89,418 \$
Tap Fees _PGA5		213,333 \$	166,666 \$	166,666 \$	166,666 \$	- \$
Other sewer revenues -Grasslands	421 \$	400 \$	400 \$	400 \$	400 \$	400 \$
<b>TOTAL Income</b>	<b>238,412</b>	<b>466,104</b>	<b>450,424</b>	<b>478,701</b>	<b>507,200</b>	<b>358,814</b>
<b>Expenses</b>						
Expenses _Operating Waterbridge	\$	19,526 \$	27,944 \$	38,954 \$	48,776 \$	58,482 \$
Expenses _Operating Depreciation	\$	83,083 \$	83,083 \$	83,083 \$	83,083 \$	83,083 \$
<b>Expenses _Grasslands</b>						
Sludge removal expense	68,790 \$	- \$	- \$	- \$	- \$	- \$
Purchased power	23,462 \$	38,000 \$	39,140 \$	40,314 \$	41,524 \$	42,769 \$
Chemicals	6,517 \$	6,000 \$	6,180 \$	6,365 \$	6,556 \$	6,753 \$
Materials & supplies	23,607 \$	22,000 \$	22,660 \$	23,340 \$	24,040 \$	24,761 \$
Cont serv - engineering	6,127 \$	2,000 \$	2,060 \$	2,122 \$	2,185 \$	2,251 \$
Contract Operators	38,150 \$	38,150 \$	39,295 \$	40,473 \$	41,688 \$	42,938 \$
Cont serv - accounting	30,000 \$	30,000 \$	30,900 \$	31,827 \$	32,782 \$	33,765 \$
Cont serv - repairs & maint	31,222 \$	12,000 \$	12,360 \$	12,731 \$	13,113 \$	13,506 \$
Cont Services - Legal	9,540 \$	5,000 \$	5,150 \$	5,305 \$	5,464 \$	5,628 \$
Cont serv - Consulting fees	60,000 \$	- \$	- \$	- \$	- \$	- \$
Sheaffer Management Fee	\$	14,000 \$	14,420 \$	14,853 \$	15,298 \$	15,757 \$
Rents	4,800 \$	1,800 \$	1,854 \$	1,910 \$	1,967 \$	2,026 \$
Sheaffer Sludge System Lease	\$	20,000 \$	20,600 \$	21,218 \$	21,855 \$	22,510 \$
Insurance expenses	475 \$	6,000 \$	6,180 \$	6,365 \$	6,556 \$	6,753 \$
Postage	1,576 \$	1,600 \$	1,648 \$	1,697 \$	1,748 \$	1,801 \$
Regulatory commission expense	657 \$	700 \$	721 \$	743 \$	765 \$	788 \$
Bad debt expense	1,718 \$	1,500 \$	1,545 \$	1,591 \$	1,639 \$	1,688 \$
Bank charges	406 \$	430 \$	443 \$	456 \$	470 \$	484 \$
Miscellaneous expense	1,078 \$	1,100 \$	1,133 \$	1,167 \$	1,202 \$	1,238 \$
<b>TOTAL Expenses</b>	<b>308,125 \$</b>	<b>200,280 \$</b>	<b>206,288 \$</b>	<b>212,477 \$</b>	<b>218,851 \$</b>	<b>225,417 \$</b>
<b>OPERATING PROFIT (LOSS)</b>	<b>(69,713) \$</b>	<b>265,824 \$</b>	<b>244,136 \$</b>	<b>266,224 \$</b>	<b>288,348 \$</b>	<b>133,397 \$</b>
<b>Other Income &amp; Expenses</b>						
Depreciation -Grasslands	(83,103) \$	(83,103) \$	(83,103) \$	(83,103) \$	(83,103) \$	(83,103) \$
Depreciation -Depreciation PGA5	\$	(83,083) \$	(83,083) \$	(83,083) \$	(83,083) \$	(83,083) \$
Taxes other than income	(11,218) \$	(11,218) \$	(11,218) \$	(11,218) \$	(11,218) \$	(11,218) \$
Interest PGA 5 reserves		\$	97 \$	368 \$	790 \$	1,365 \$
Interst on PGA 5 Bonds		(32,000)	(30,400)	(28,800)	(27,200)	(25,600)
Interest & dividend income	230 \$	5 \$	5 \$	5 \$	5 \$	5 \$
Donations for charitable, soci	(3,000) \$	(1,500) \$	(1,500) \$	(1,500) \$	(1,500) \$	(1,500) \$
Interest expense	(22,060) \$	(22,060) \$	(22,060) \$	(22,060) \$	(22,060) \$	(22,060) \$
<b>TOTAL Other Income &amp; Expenses</b>	<b>(119,150)</b>	<b>(232,958)</b>	<b>(231,261)</b>	<b>(229,391)</b>	<b>(227,368)</b>	<b>(225,194)</b>

Cartwright Creek, LLC  
Pro-forma Financial Statements for Existing Grassland Plant and PGA5

<b>PROFIT(LOSS) BEFORE TAXES</b>	<b>(188,863)</b>	<b>32,865</b>	<b>12,874</b>	<b>36,833</b>	<b>60,980</b>	<b>(91,796)</b>
Tax Distribution to Investors	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>NET PROFIT (LOSS)</b>	<b>(188,863)</b>	<b>32,865</b>	<b>12,874</b>	<b>36,833</b>	<b>60,980</b>	<b>(91,796)</b>
Net Cash Flow	(105,760)	32,885	95,977	119,936	144,083	(8,693)

Cartwright Creek Utility Co  
Balance Sheet  
As of October 31,

	2004	2005	2006	2007	2008	2009
<b>Current Assets:</b>						
Fifth Third Bank - MMA	\$297	\$297	\$297	\$297	\$297	\$297
Cash - Waterbridge (PGA5)		\$281,332	\$493,175	\$708,066	\$926,590	\$874,091
Cash - Waterbridge Reserves(PGA5)		\$2,432	\$9,196	\$19,760	\$34,124	\$50,388
Union Planters - Operating	\$458	\$33,343	\$129,321	\$249,257	\$393,341	\$384,648
Union Planters - MMA	\$5,475	\$5,475	\$5,475	\$5,475	\$5,475	\$5,475
Deferred Rate Case Expense	\$668	\$668	\$668	\$668	\$668	\$668
Customer accounts receivable	(\$498)	(\$498)	(\$498)	(\$498)	(\$498)	(\$498)
<b>TOTAL Current Assets</b>	<b>\$6,401</b>	<b>\$323,050</b>	<b>\$637,635</b>	<b>\$983,026</b>	<b>\$1,359,997</b>	<b>\$1,315,069</b>
<b>Fixed Assets:</b>						
Utility plant in service	\$956,947	\$956,947	\$956,947	\$956,947	\$956,947	\$956,947
A/D & amort of utility plant	(\$693,064)	(\$776,167)	(\$859,270)	(\$942,373)	(\$1,025,476)	(\$1,108,579)
Utility Plant in Service						
Structures & improvements	\$25,757	\$25,757	\$25,757	\$25,757	\$25,757	\$25,757
Collection sewers - gravity	\$219,975	\$219,975	\$219,975	\$219,975	\$219,975	\$219,975
Flow measuring devices	\$5,414	\$5,414	\$5,414	\$5,414	\$5,414	\$5,414
Flow measuring installations	\$7,160	\$7,160	\$7,160	\$7,160	\$7,160	\$7,160
Receiving wells	\$95,903	\$95,903	\$95,903	\$95,903	\$95,903	\$95,903
Pumping equipment	\$127,225	\$127,225	\$127,225	\$127,225	\$127,225	\$127,225
Treatment & disposal equipment	\$409,085	\$409,085	\$409,085	\$409,085	\$409,085	\$409,085
Plant sewers	\$11,158	\$11,158	\$11,158	\$11,158	\$11,158	\$11,158
Outfall sewer lines	\$21,758	\$21,758	\$21,758	\$21,758	\$21,758	\$21,758
Other plant & misc equipment	\$31,303	\$31,303	\$31,303	\$31,303	\$31,303	\$31,303
Other tangible plant	\$2,209	\$2,209	\$2,209	\$2,209	\$2,209	\$2,209
Utility plant in service offse	(\$956,947)	(\$956,947)	(\$956,947)	(\$956,947)	(\$956,947)	(\$956,947)
<b>TOTAL Utility plant in service offset</b>						
<b>Utility Plant in Service - PGA 5</b>	<b>\$0</b>	<b>\$746,667</b>	<b>\$693,334</b>	<b>\$640,001</b>	<b>\$586,668</b>	<b>\$533,335</b>
<b>Land - Waterbridge Site</b>	<b>\$0</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>
<b>TOTAL Fixed Assets</b>	<b>\$263,883</b>	<b>\$1,127,447</b>	<b>\$991,011</b>	<b>\$854,575</b>	<b>\$718,139</b>	<b>\$581,703</b>
<b>Other Assets:</b>						
Misc current & accrued assets						
<b>TOTAL Other Assets</b>	<b>\$321</b>	<b>\$321</b>	<b>\$321</b>	<b>\$321</b>	<b>\$321</b>	<b>\$321</b>

Cartwright Creek, LLC  
Pro-forma Financial Statements for Existing Grassland Plant and PGA5

<b>TOTAL ASSETS</b>	<b>\$270,605</b>	<b>\$1,450,818</b>	<b>\$1,628,967</b>	<b>\$1,837,922</b>	<b>\$2,078,457</b>	<b>\$1,897,092</b>
<b>LIABILITIES</b>						
<b>Current Liabilities:</b>						
Accounts payable	49,349	49,349	49,349	49,349	49,349	49,349
Accrued Franchise Tax	585	585	585	585	585	585
Accrued Ad Valorem Tax	3,650	3,650	3,650	3,650	3,650	3,650
Accrued Gross Receipts tax	4,880	4,880	4,880	4,880	4,880	4,880
Accrued interest						
<b>TOTAL Current Liabilities</b>	<b>58,464</b>	<b>58,464</b>	<b>58,464</b>	<b>58,464</b>	<b>58,464</b>	<b>58,464</b>
<b>Long-Term Liabilities:</b>						
Tax-Exempt Wastewater Bonds		760,000	720,000	680,000	640,000	600,000
L/T Debt - Reese L. Smith III						
L/T Debt - Stephen B. Smith	423,494	423,494	423,494	423,494	423,494	423,494
<b>TOTAL Long-Term Liabilities</b>	<b>423,494</b>	<b>1,183,494</b>	<b>1,143,494</b>	<b>1,103,494</b>	<b>1,063,494</b>	<b>1,023,494</b>
<b>Other Liabilities:</b>						
Contributions in aid of constr	1,150,293	1,150,293	1,150,293	1,150,293	1,150,293	1,150,293
<b>TOTAL Other Liabilities</b>	<b>1,150,293</b>	<b>1,150,293</b>	<b>1,150,293</b>	<b>1,150,293</b>	<b>1,150,293</b>	<b>1,150,293</b>
<b>TOTAL LIABILITIES</b>	<b>1,632,251</b>	<b>2,392,251</b>	<b>2,352,251</b>	<b>2,312,251</b>	<b>2,272,251</b>	<b>2,232,251</b>
<b>CAPITAL</b>						
Common stock issued	1,000	1,000	1,000	1,000	1,000	1,000
Retained earnings (deficit)	(1,246,266)	(1,362,646)	(1,126,015)	(1,074,533)	(992,244)	(878,375)
Retained earnings (deficit) -PGA5		200,000	0	0	0	0
Year-to-Date Earnings -PGA5		57,099	38,608	45,456	52,888	(49,568)
Year-to-Date Earnings -Grassland	(116,380)	(20,468)	12,874	36,833	60,980	(91,796)
<b>TOTAL CAPITAL</b>	<b>(1,361,646)</b>	<b>(1,125,015)</b>	<b>(1,073,533)</b>	<b>(991,244)</b>	<b>(877,375)</b>	<b>(1,018,740)</b>
<b>TOTAL LIABILITIES &amp; CAPITAL</b>	<b>270,605</b>	<b>1,267,235</b>	<b>1,278,717</b>	<b>1,321,007</b>	<b>1,394,875</b>	<b>1,213,511</b>
	\$0.01	(\$183,582.79)	(\$350,249)	(\$516,915)	(\$683,582)	(\$683,582)

1   **Q.    Would you state your name for the record, please?**

2    A.    My name is Robert Ian Cochrane

3   **Q.    By whom are you employed, Mr. Cochrane, and what is your position?**

4    A.    I am the Vice-President of Finance for Sheaffer International, L.L.C.

5   **Q.    How long have you been employed by Sheaffer International, L.L.C.?**

6    A.    Since October of 1999.

7   **Q.    Please describe the duties that you perform at Sheaffer International, L.L.C.**

8    A.    I direct and oversee all accounting and finance functions, including the  
9           accounting, budget, accounts payable, purchasing, personnel, payroll, and cash  
10          management areas. I maintain principal banking, insurance, employee benefit,  
11          and investment relationships. I negotiate terms for credit enhancement  
12          instruments and coordinate the issuance of tax-exempt revenue bonds through  
13          state conduit agencies financing wastewater treatment projects. I also negotiate  
14          the terms of customer contracts and related agreements. In addition, I currently  
15          serve as the treasurer for the Community Counseling Center of Fox Valley, a  
16          mental health and substance abuse rehabilitation agency in west suburban  
17          Chicago.

18   **Q.    What is your educational background, and what degrees and licenses do you**  
19       **hold?**

20   A.    I received a BS degree in accounting from Bradley University, and I received my  
21          MBA from Lake Forest Graduate School of Management in Illinois. The  
22          University of Illinois issued my CPA certificate in 1981. I participate in the  
23          continuing professional education as required by my profession. In addition, I  
24          have been a financial officer at both Roosevelt University and National-Louis  
25          University. Finally, I am a member of the Illinois CPA Society.

26   **Q.    Mr. Cochrane, what is the purpose of your testimony in this case?**

1 A. The purpose of my testimony is to present information to the TRA on managerial,  
2 financial, and technical capability of Cartwright Creek In addition, I am  
3 responsible for and will present testimony related to the historical and pro forma  
4 financial statements previously submitted by Cartwright Creek in response to the  
5 TRA Staff's data requests.

6 **Q. Mr. Cochrane, please describe the managerial capabilities of Cartwright**  
7 **Creek.**

8 A Cartwright Creek, through the expertise of its principal, Sheaffer International,  
9 has the managerial capability to provide wastewater utility services. The Sheaffer  
10 System technology was developed by our company chairman, John R (Jack)  
11 Sheaffer, Ph.D in the 1960s and 1970s. Dr. Sheaffer developed the conceptual  
12 framework for the technology while teaching at the University of Chicago and  
13 serving as Science Advisor to the Secretary of the United States Army. While  
14 serving the latter role, Dr. Sheaffer's helped to write the Federal Clean Water Act,  
15 which states that our rivers and streams are no longer to be considered part of the  
16 wastewater treatment process.

17 When it became apparent that the "zero-discharge" goal of the Clean Water Act  
18 was not going to be met by the government, Dr Sheaffer retired from public  
19 service. He dedicated his life to showing people that a properly designed and  
20 operated zero-discharge system would not only benefit the environment, but also  
21 save money. He developed the "Sheaffer System" as the means to accomplish  
22 this goal. The first Sheaffer System was the landmark Muskegon, Michigan  
23 system. The Muskegon system, which is still in operation today, was a 40 MGD  
24 project and was hailed by US EPA as a textbook example of a system complying  
25 with the Clean Water Act. In subsequent years, Dr. Sheaffer used his technology  
26 to conceptualize, design and construct hundreds of successful Sheaffer Systems  
27 for municipalities and residential and commercial developments.

1 In the mid-90's it became apparent that customers were looking for companies to  
2 provide service beyond design engineering. Therefore, Sheaffer International,  
3 L.L.C was formed in 1996 to design, build, own, operate, and maintain  
4 ("BOOM") Sheaffer Systems. Sheaffer International has completed over one  
5 hundred projects for municipalities, developers, industries, and commercial  
6 clients, for wastewater treatment and reclamation systems. These projects all  
7 feature the technology originally developed by Dr Sheaffer, which has been  
8 refined through its use in the numerous projects over three decades.

9 Sheaffer has assembled a talented and experienced team of professionals to  
10 implement the Sheaffer technology and manage company operations, beginning  
11 with Dr. Sheaffer himself. Dr. Sheaffer has served as the Chairman of Sheaffer  
12 International since forming the company in 1996. As company Chairman, Dr.  
13 Sheaffer plays an active role in the formulation and implementation of major  
14 projects. His problem solving skills are as legendary as his capability for fresh,  
15 insightful thinking. He has had a long and distinguished career as a champion of  
16 reclamation and reuse, as I have already described. Dr. Sheaffer also currently  
17 serves as the Chairman of the Environmental Commission of DuPage County,  
18 Illinois. He is a member of the National Review Committee on Floodplain  
19 Management in the United States, and the National Association of State  
20 Floodplain Managers gives a "John R. Sheaffer" Award each year for excellence  
21 in flood proofing, in his honor. Dr. Sheaffer is also the author or co-author of 10  
22 books and more than 50 technical articles on wastewater management, irrigation,  
23 flood proofing, and fresh water resources.

24 In addition to Dr. Sheaffer, the Sheaffer team includes the following staff of  
25 engineers, planners and designers, operators, and support personnel, and a core  
26 group of leaders.



- 1       • **Michael Stahelin** leads the Sheaffer team as President of Sheaffer  
2       International. Mr. Stahelin is also a majority owner of the Company In  
3       addition to serving as Sheaffer's President, Michael serves as President of  
4       Stahelin Properties, a full service real estate firm which owns more than  
5       1,150,000 square feet of office and commercial real estate in Cook and  
6       DuPage Counties in Illinois
- 7       • **Joseph Del Nuovo** is a Senior Manager with over 37 years of combined  
8       staff management and engineering construction management experience  
9       and has worked with Sheaffer International since June of 1999. He is a  
10      Senior Project Manager responsible for construction management,  
11      contract negotiation, cost estimation, vendor selection and contract  
12      management. He managed the construction of the 1 923 mgd North Fork  
13      SMRRS in Timberville, VA. He is also responsible for management of  
14      operations at that facility. Currently Mr. Del Nuovo is leading Sheaffer  
15      construction oversight for two Sheaffer Systems in the Nashville area,  
16      which will be constructed in 2005 Earlier in his career, Mr. Del Nuovo  
17      served as a Senior Vice President/General Manager for Pieco of South  
18      Florida, a Division of Metcalf & Eddy As Senior Vice President he  
19      provided consulting services and directed Environmental Remediation for  
20      more than 450 projects and other engineering services for the petroleum  
21      industry In addition, he served on state and county "ad hoc" committees  
22      as technical advisor for remediation methods and technology. As General  
23      Manager for Metcalf & Eddy he oversaw five branch offices and facilities  
24      located in Florida and Georgia, with a staff numbering over 300. Mr. Del  
25      Nuovo received his education from the University of Buffalo School of  
26      Engineering and is a licensed Pollutant Storage Systems Contractor in the  
27      State of Florida

1           • **Bruce Meyer, P.E** serves as Sheaffer's Chief Engineer. Mr. Meyer is an  
2           environmental engineer with over 25 years of experience. He graduated  
3           from the Illinois Institute of Technology with his M.S. degree and  
4           received his B.S. degree from the University of Illinois at Chicago. He is  
5           a licensed Professional Engineer. Mr. Meyer's experience includes the  
6           design, construction, and operation of environmental treatment systems  
7           for wastewater, hazardous waste, air pollution control and recycling/reuse.  
8           He has project management experience in a wide range of settings from  
9           small, individual facilities with single customers, to complex industrial  
10          settings, such as integrated iron and steel facilities, with multiple  
11          customers and requirements. He has held a wide range of positions in the  
12          environmental field from project engineer and project manager in a  
13          consulting role to facility engineer manager and operations manager as an  
14          employee of the owning/operating company.

15         • **Tom Voirin** is Vice President of Sales for Sheaffer International. Mr.  
16         Voirin is a senior executive with 27 years experience in the Services sector with  
17         companies such as IBM, Motorola and Tellabs. He graduated from Illinois State  
18         University with a Bachelor of Science in Business Education. Most recently Mr.  
19         Voirin was the Vice President and General Manager at ADC  
20         Telecommunications where he has successfully guided the business through  
21         critical market conditions using a performance based business model. In this role  
22         he managed P&L objectives for a \$60 million business with 200 employees in a  
23         28 state region.

24         Finally, I serve as Sheaffer's Vice President of Finance, as I have already  
25         described to you. In addition, we have obtained knowledge of the Tennessee  
26         regulatory requirements through the retention of T. Chad White of Tune, Entekin

1 and White as legal counsel, and Hal Novak, CPA/CMA as a utility consultant for  
2 regulatory matters

3 The Sheaffer System is compatible with a "smart growth" program, preserving  
4 open green space for reclaimed water. The Sheaffer International staff is  
5 experienced at working with developers, city engineers, and planner to integrate  
6 the system to meet the goals of the Williamson County community and the State  
7 of Tennessee.

8 **Q. Mr. Cochrane, please describe the financial capabilities of Cartwright Creek.**

9 A. The historical and pro forma financial statements submitted into evidence were  
10 either prepared by myself or under my supervision. For the most recent period,  
11 Cartwright Creek's financial information is as follows:

- 12 • **Total Assets.** As of 10/31/04, the Cartwright Creek Utility Company has  
13 total assets of \$263,883. The developer is expected to transfer the title to  
14 Sheaffer International of the land for the treatment system and irrigation  
15 for the Waterbridge System. Sheaffer intends to finance the construction  
16 of the Waterbridge facility through the issuance of tax-exempt bonds in  
17 the amount of \$800,000. This loan will be secured by a direct pay letter of  
18 credit provided by the developer to secure the bonds. Security for this  
19 letter of credit will be unsold lots. As tap-fees are received by Cartwright  
20 Creek, the funds will be used to prepay these bonds.
- 21 • **Net Worth.** As of October 31, 2004, Cartwright Creek's balance sheet  
22 reflects negative net worth of \$211,343. This negative net worth position  
23 reflects the current age of the donated facility and a history of recent  
24 operating losses, especially the loss for the last twelve month period of  
25 \$188,000 which included a number of one-time only expense. Sheaffer  
26 believes that this negative net worth understates the true value of the  
27 existing treatment facility and thus does not reflect significant goodwill.

- 1           • **Net Income.** During the last twelve month period, Cartwright Creek  
2           reported an operating loss of over \$188,000. This amount reflects  
3           significant one-time repairs to the plant of \$25,000 and the payment of  
4           consulting fees to the Smiths for management oversight not charged in  
5           previous years. No such payment will be made in the future. In addition,  
6           excess flows above design capacity has pushed sludge handling expenses  
7           to \$68,790 during the last year. Sheaffer International has developed a  
8           propriety technology which it intends to install at the Grassland's facility  
9           This technology is expected to eliminate all waste hauling expenses,  
10          although \$15,000 in additional electrical expense will be incurred as a  
11          result of its impletion. These changes can be expected to eliminate the  
12          recurring operating losses which have produced the current negative net  
13          worth. In early 2005, Sheaffer's engineering staff will develop a plan to  
14          correct the current infiltration and inflow problem which restricts  
15          Cartwright Creek's ability to extend service to several potential  
16          developments which are currently under consideration by area  
17          developers. Sheaffer's preliminary review indicates that a modest  
18          investment of \$100,000 should produce sufficient additional capacity to  
19          recapture this investment through prepaid tap-fees from the Smith  
20          Brothers or any developer whom expressed interest in any available  
21          capacity. A modest expansion of the approximate 500 current customers  
22          of the Grassland facility will generate modest operating surpluses and  
23          fund the establishment of renewal and replacement reserves at the current  
24          rate tariff

25          The financial projections for the new Waterbridge plant demonstrate long-term  
26          viability and sustainable nature of this new service area. The financial projects  
27          reflect modest sales of the existing homes. The developer has agreed to hold

1 Cartwright Creek financially harmless until all the lots are sold. Utilizing the  
2 existing Cartwright Creek rate tariff, Sheaffer proposes to fund a reserve of  
3 \$16,264 per year when all the homes of served Since the Sheaffer System for  
4 Water requires few mechanical components-grinder pumps, air blowers, and  
5 irrigation pumps, there are few mechanical components used in the operation of  
6 the system. Accordingly, the proposed reserve should be sufficient to generate  
7 sufficient reserves to replace any equipment items which fail. Also, Sheaffer is  
8 proposing to expand the existing business insurance program to cover the full  
9 replacement cost of the system, expand general liability coverage to assure that no  
10 reasonable unfunded insurance claims would jeopardize the viability of the  
11 system including an expansion of Sheaffer's existing professional, umbrella,  
12 boiler and machinery, business interruption and extra-expense coverage, and  
13 pollution insurance coverage currently underwritten though CNA Insurance.  
14 Sheaffer through its business insurance program can assure regulators that  
15 sufficient resources will be available to cover losses from catastrophic events and  
16 acts of god.

17 In addition, Sheaffer intends to contract with qualified licensed general and sewer  
18 contractors to build the facility. Payment and performance bonds are included in  
19 Sheaffer's design specifications. However, Sheaffer personnel will provide  
20 construction oversight to assure that the facility is constructed in accordance with  
21 plans and specifications.

22 Sheaffer International LLC's professional liability program provides additional  
23 protections to the TRA that the Cartwright Creek's Customers have recourse in  
24 the event of a system failure due to design negligence or other errors or omission

25 In addition to the direct financial resources of tap and monthly treatment fees,  
26 Sheaffer International owns and operates two other wastewater treatment  
27 facilitates serving municipalities and large companies under long-term take or pay

1 contracts with minimum payments in excess of \$60,000,000. These long-term  
2 contracts with guaranteed minimum payments represent a significant asset that is  
3 not reflected in the financial statements of Sheaffer International and provide a  
4 source of cash liquidity as well as a significant asset base which could be  
5 leveraged to support the operations of the Cartwright Creek system.

6 The operating surpluses of the Waterbridge facility, although modest are  
7 sufficient in nature to cover the direct expenses of the facility. Sheaffer  
8 International LLC is able to assure its ability to provide cost effective operational  
9 services to the facility during the start-up phase because of this existing five-year  
10 contract with the nearby Town of Thompson Station. This town has contracted  
11 with Sheaffer to provide on-site management services to two Sheaffer Systems  
12 scheduled to be constructed during 2005 within the Town.

13 **Q. Mr. Cochrane, please describe further the other contracts that Sheaffer is a**  
14 **party to outside of Tennessee.**

15 **A** Sheaffer's SIL Clean Water LLC project is a 1.9 million gallon per day Sheaffer  
16 System in Timberville, Virginia. The "North Fork" System, named for the nearby  
17 North Fork of the Shenandoah River, has treatment capacity for all the wastewater  
18 from the towns of Timberville and Broadway, Virginia, and large poultry  
19 processing plants owned by Cargill Turkey Products and Pilgrim's Pride, two of  
20 the largest food processing companies in the nation. The system enables the two  
21 towns and two chicken processing plants to decommission their older wastewater  
22 treatment facilities and guarantee affordable wastewater treatment costs. The  
23 poultry facilities represent 75 percent of the current flow, so the North Fork  
24 facility receives wastewater organics and solid loads five (5) times more  
25 concentrated than a typical wastewater treatment facility would receive. The  
26 North Fork facility is owned and managed by Sheaffer International staff and has  
27 been operating for five years. The total annual contractual revenue exceeds \$1,

1 700,000 per year with total remaining contractual customer commitments  
2 exceeding \$37,000,000. At the end of the twenty-five year contract, Sheaffer  
3 estimates that the economic value of the facility will exceed \$15,000,000 as all  
4 debt will be repaid.

5 Cortland, Illinois is a small town of 2,000 on the western fridge of suburban  
6 Chicago The town is sandwiched between suburban Chicago and the City of  
7 DeKalb (population 39,000) Due to the westward expansion of the Chicago  
8 suburbs, the Town anticipates growing. The Town was told that the DeKalb  
9 facility, which currently handles the Town's wastewater, cannot accommodate the  
10 anticipated additional flow. As a result, Sheaffer International has been selected  
11 to design a Sheaffer System that would incorporate the existing wastewater flow  
12 and flows from all new developments. The Town has signed a thirty-year  
13 \$26,000,000 contract for Sheaffer to provide wastewater treatment services. The  
14 Cortland Sheaffer System will initially treat 250,000 gallons per day of existing  
15 flow and will be designed to be expandable to 750,000 gallons per day and  
16 ultimately to 1 5 million gallons per day The reclaimed water from the Sheaffer  
17 System will be reused to irrigate nearby farms and accommodate open space, thus  
18 helping to preserve the community's rural heritage. Sheaffer International LLC is  
19 working with area developers as well as the town to coordinate planning and  
20 ensure that both parties' goals are achieved. Sheaffer estimates that the economic  
21 value of the facility will exceed \$10,000,000 as all debt will be repaid.

22 These contracts represent an existing resource stream that assures Sheaffer's  
23 future ability to provide the necessary resources to assure the operating viability  
24 of Cartwright Creek. In addition, these contracts assure that Sheaffer  
25 International LLC personnel will possess the necessary skills to manage the  
26 Cartwright Creek Utility

1   **Q.   Mr. Cochrane, please describe the technical capabilities of Cartwright**  
2       **Creek.**

3   **A.**   While total number of homes being served by systems utilizing the reclamation  
4       and reuse concept, developed by Dr. Sheaffer with Sheaffer International and his  
5       previous firm Sheaffer and Roland exceeds, 100,000 homes or commercial  
6       equivalents. We currently have contracts for active design projects that will serve  
7       over 37,000 additional homes or commercial developments equivalents. In  
8       addition, we have additional projects that we have been working on that will  
9       hopefully be accepted and under development to serve thousands more. The  
10      Sheaffer System is compatible with a “smart growth” program, preserving open  
11      green space for reclaimed water irrigation. The Sheaffer International staff is  
12      experienced at working with developers, city engineers, regulatory staff, and  
13      planners to integrate the system to meet the goals of the Williamson County  
14      community and the State of Tennessee.

15      Sheaffer International has assembled an extremely experienced group of  
16      professional potable water and wastewater engineers, construction managers,  
17      financial, and operations staff. The depth of our staff member’s experience  
18      includes

- 19           • Design and construction experience in over twenty states and five  
20           countries.
- 21           • Multiple tax-exempt bond issuances
- 22           • Design, construction and operation of Sheaffer Systems and many other  
23           types of conventional wastewater treatment systems and numerous water  
24           management, industrial waste treatment, remediation, and air pollution  
25           systems
- 26           • Design and construction of wastewater and potable water systems for  
27           municipalities exceeding 30,000 people.



- 1           • Extended public accounting experience including audits of municipal  
2           entities and billing systems.
- 3           • Management of municipal engineering and maintenance budgeting and  
4           staff
- 5           • Ongoing management of wastewater reclamation projects for residential  
6           developments that transition in ownership for a development company to a  
7           home builder, and are eventually turned over to a municipality for  
8           ownership and operation.
- 9           • Successful preparation and receipt of permits from federal, state, and local  
10          agencies for wastewater, water reuse, and watershed management  
11          facilities
- 12          • Successful startup and ongoing management of an environmental business  
13          that grew from a two-person staff to over 300 people.

14       Sheaffer is proposing to build for Cartwright Creek a Sheaffer Modular  
15       Reclamation and Reuse System (SMRRS) to serve the Waterbridge Development.  
16       An SMRRS consists of two deep anaerobic/aerobic aerated reclamation cells with  
17       36 days of treatment time and a 150-day storage reservoir. The cells and  
18       reservoir are lined to prevent the loss of water. The SMRRS operates without  
19       producing odors and minimizes the production of sludge, which is contained in  
20       the cells for 40 (or more) years. The reclamation process produces clean, clear,  
21       odor-free water for irrigation of crops and community parks and open spaces.

22       Numerous systems developed under the direction of the company's Chairman,  
23       John R. Sheaffer, Ph.D , are already operating effectively in northeastern Illinois.  
24       The Illinois Pollution Control Board also adopted policies in 2002 that require a  
25       full and fair consideration of non-discharging systems for any new or expanded  
26       discharge. The SMRRS is a non-discharging system which meets the  
27       requirements of the Illinois EPA

1 Sheaffer proposes to implement within Williamson County an SMRRS network in  
2 both the Waterbridge development and its PGA5 environs. Within the service  
3 zone, new residential subdivisions and business districts would be served by  
4 SMRRS built by developers and dedicated to the Cartwright Creek, which would  
5 own, manage, operate and maintain the facilities and administer the service  
6 district. All of these components would be designed to allow ready expansion to  
7 meet the service area's future needs. The steps in the reclamation and reused  
8 process are summarized below.

- 9 • **Step One: Maceration.** Maceration is another word for grinding.  
10 Incoming sanitary wastewater is passed through a comminutor to grind  
11 solids into small particles and maximize their surface area. This improves  
12 mixing and biodegradation. Comminutors are rugged, automatic units  
13 with bypass channels. Routine maintenance is limited to grinder motor  
14 servicing.
- 15 • **Step Two: Anaerobic and Aerobic Reclamation.** Macerated wastewater  
16 flows by gravity through a buried pipe from the comminutor to the base of  
17 Cell I. This prevents wastewater from direct exposure to the air, and  
18 delivers the wastewater directly to an anaerobic zone at the base of Cell I.  
19 Biodegradation occurs within this oxygen free zone (typically 2 to 4 feet  
20 deep). Organic solids break down into constituent chemicals and  
21 compounds. Air is introduced directly above this anaerobic zone to form a  
22 well-oxygenated column of water 12 to 20 feet deep. Air blowers  
23 installed at the top of the cell berm feed coarse bubble aerators. The  
24 odorous gases produced in the anaerobic zone are chemically transformed  
25 in the aerobic zone into non-odorous compounds. Treated wastewater at  
26 the top of Cell I is transferred through a manhole and allowed to flow by  
27 gravity to the base of Cell II, where the anaerobic/aerobic process is

1 repeated. The reclamation cells are sized to provide a prolonged treatment  
2 time of 36 days. This feature produces several benefits:

- 3 1 Long detention aerobic time breaks down difficult pollutants, such  
4 as fats, oil, and greases, without producing sludges.
- 5 2. Large cells can readily accommodate fluctuations in wastewater  
6 flow and loadings.
- 7 3. The large volumes in the anaerobic zone provide long-term storage  
8 capacity for solids that do not biodegrade over a long period of  
9 time.
- 10 4 Deep cells promote oxygen transfer efficiency.

- 11 • **Step Three: Storage Reservoir.** Reclaimed water from Cell II flows by  
12 gravity to a storage reservoir, where static tube aerators are used to keep  
13 the water mixed. The storage reservoir provides 150 days of holding  
14 capacity per Illinois standards. This capacity allows irrigation to be  
15 controlled to avoid inclement weather.
- 16 • **Step Four: Reuse of Reclaimed Water.** Reclaimed water is reused for  
17 irrigation. Reclaimed water has been used in Illinois to irrigate golf  
18 courses, parks, forest preserves, farms, athletic fields and buffer lands. In  
19 Illinois, the average weekly irrigation rate is 1.5 inches for 30.7 weeks a  
20 year or 46.05 inches per year. This means that for every 100,000  
21 gallons/day of design flow, about 30 acres of irrigation land are needed  
22 (29.19 acres). This equates to about one (1) acre for every ten (10) homes.  
23 In many communities, recreational open space or cropland is available  
24 nearby for this purpose Sheaffer has been successful in obtaining no-cost  
25 irrigation easements from cooperating landowners to allow irrigation on  
26 their land. This eliminates the need to purchase irrigation acreage, and

1 allows local farm families to stay in farming and produce consistently high  
2 yields.

3 Sheaffer has extensive experience in the planning, design, operation and  
4 management of SMRRS (approximately 100 in the last 25 years). This  
5 experience shows that a network of SMRRS can be managed to secure significant  
6 advantages to the Waterbridge development and its environs. These include:

- 7 • Flexibility in accommodating growth.
- 8 • Automatically attaining recreation, park and open space goals.
- 9 • The high quality of the reclaimed water makes it available for reuse for  
10 many purposes, including, but not limited to irrigation, industrial cooling,  
11 equipment washing, fountains and decorative ponds, and groundwater  
12 recharge. The groundwater recharge will increase the base flow into the  
13 waterways, augmenting low flows. The reclaimed water meets Illinois  
14 discharge standards, even though we recommend no-discharge permitting  
15 rather than NPDES permitting.
- 16 • Long term permit compliance with no discharge vs. continual monitoring  
17 costs and expensive future capital improvements inherent in conventional  
18 systems to meet increasingly stringent discharge standards.
- 19 • Phased implementation of the sewerage system needed to serve the current  
20 population owing to the potential for staging the SMRRS facilities and  
21 irrigation areas in step with the sewerage system phasing
- 22 • Support from environmental and conservation groups.
- 23 • Assurance of steady user fees in the future, making the SMRRS the least  
24 cost solution for existing as well as future residents and businesses
- 25 • Potential for developer-provided SMRRS to existing area residents with  
26 failing septic systems in a cost-effective manner.
- 27

1 The Sheaffer International staff has managed a wide range of wastewater  
2 treatment systems and could manage other types of system into one design for the  
3 proposed service area in Williamson County. In addition, operating Sheaffer  
4 systems serve from 4 homes at our Prairie Bluff facility to 5,400 houses in North  
5 Fork. Dr. Sheaffer has been designing these systems since 1973 prior to forming  
6 Sheaffer International LLC. Sheaffer Systems treat sanitary wastes from  
7 municipal and residential customers and higher strength wastes from agricultural  
8 and industrial customers. A typical sanitary waste stream would contain BOD5 of  
9 200 mg/L. Sheaffer Systems are currently serving some industrial customers with  
10 waste streams of 1,000-2,000 mg L BOD5. The proposed Waterbridge facility  
11 would likely treat domestic wastewater from the proposed residential  
12 development. The system has the inherent capacity to treat a 10% addition of  
13 septage. The Sheaffer System could be used to service those area residents on  
14 septic tanks. Septage is higher strength than domestic waste but not as strong as  
15 industrial.

16 The Sheaffer design accommodates wet weather by providing storage capacity,  
17 such that irrigation does not occur when it rains. The storage design is  
18 determined using TDEC regulatory guidelines and available climate data, to  
19 assure that the system can be shutdown for an extended period of inclement  
20 weather without any problems.

21 **Q. Does this conclude your testimony?**

22 **A.** Yes, it does.